



# Zoo Boulevard & I-235 Big Ditch Crossing

# Historical Recap

- Northwest Wichita Traffic Congestion Relief Study
- I-235 Connector Corridor Study
- Northwest Wichita Traffic Congestion Relief Study

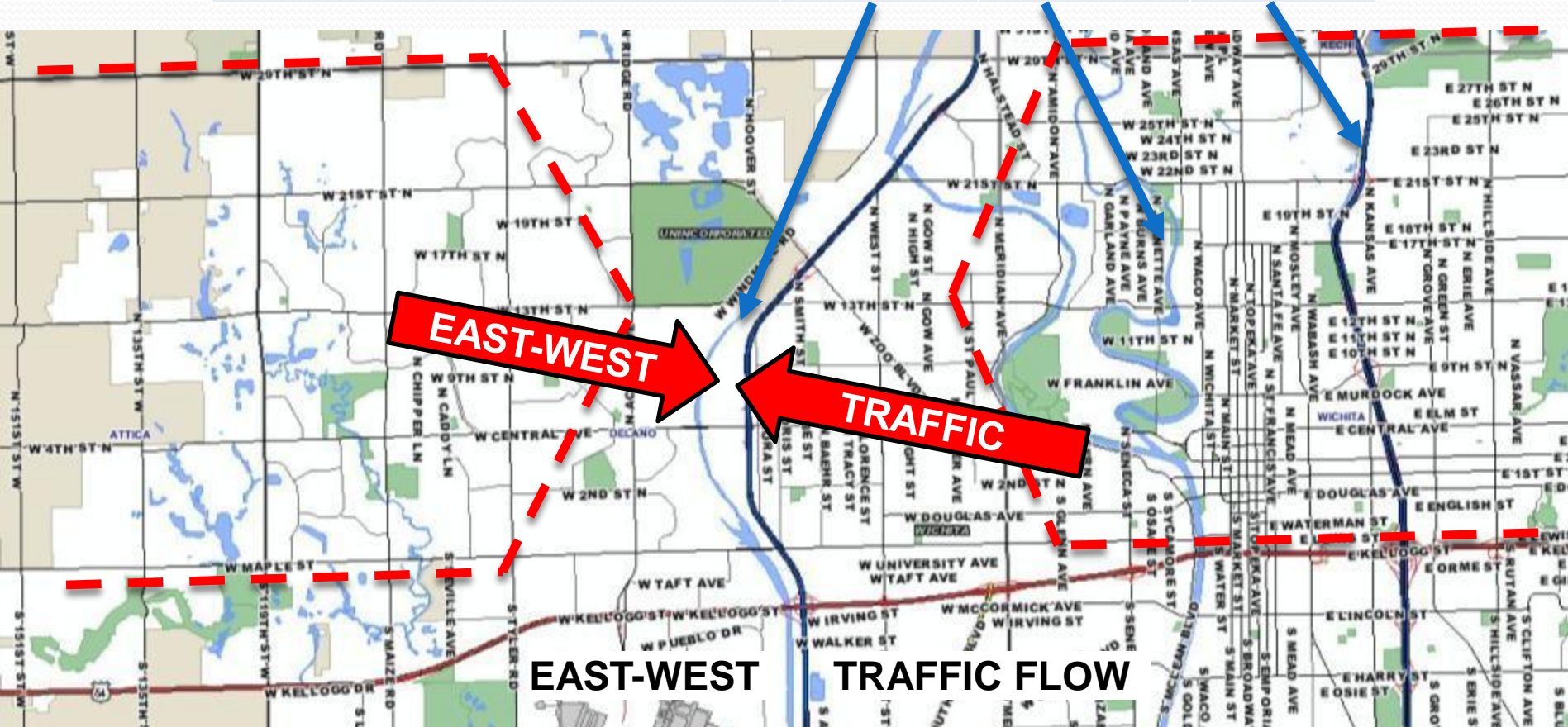
**The first study: October 1994-August 1995**

# **Northwest Wichita Traffic Congestion Relief Study**

***Booker Associates, Inc. of Kansas***

# 1995 Congestion Relief Study

	Barrier		
Between Maple & 29 <sup>th</sup> Streets	Floodway	Ark. River	I-135
Number of Crossings	3	6	8
Total Traffic Volume (ADT)	75,000	90,000	130,000
Ave. Volume / Crossing	25,000	15,000	16,000



# The Build Alternatives

- ✓ Widen Zoo Boulevard
- Central Ave. & Zoo Blvd. Widening
- ✓ New 13<sup>th</sup> Street crossing
- New 21<sup>st</sup> Street crossing
- New 25<sup>th</sup> Street crossing to 21<sup>st</sup> Street
- ✓ New 25<sup>th</sup> Street crossing to 29<sup>th</sup> Street

The No-Build Alternative will mean accepting the existing traffic congestion problem and its adverse impact on the community.

The Traffic Reduction Strategies including Traffic Demand Management (TDM), Mass Transit (Buses) and Transportation System Management (TSM), provide only minimal relief to the congestion problem. Individually or jointly, these strategies do not appear to have the capabilities of solving the problem.

The Build Alternatives consist of:

- Zoo Blvd. widening
- Central Ave. & Zoo Blvd. widening
- New 13th Street crossing
- New 21st Street crossing
- New 25th Street crossing to 21st St.
- New 25th Street crossing to 29th St.

Based on a comparative evaluation of the alternatives in terms of achieving acceptable level of service, cost and impact on the environment including the immediate neighborhood, these alternatives were selected for further detailed analysis:

- New 13th Street Crossing
- Widen Zoo Boulevard/Reconstruct I-225 Interchange
- New 25th Street crossing to 29th Street



N 29<sup>th</sup> Street

N 25<sup>th</sup> Street

N 21<sup>st</sup> Street.

I-235

West St.

Windmill Rd.

Zoo Blvd.

N 13<sup>th</sup> Street.

Central Ave.

## Alignment Alternatives

- ✓ Widen Zoo Boulevard
- Central Ave. & Zoo Blvd. Widening
- ✓ New 13<sup>th</sup> Street crossing
- New 21<sup>st</sup> Street crossing
- New 25<sup>th</sup> Street crossing to 21<sup>st</sup> Street
- ✓ New 25<sup>th</sup> Street crossing to 29<sup>th</sup> Street



# Conclusion of Study

- A “new crossing over the I-235/Floodway barrier on 13<sup>th</sup> Street appears to yield the best solution for traffic congestion relief from planning and engineering points of view.”

## 1.6 CONCLUSION

New crossing over the I-235/Floodway barrier on 13th Street appears to yield the best solution for traffic congestion relief from planning and engineering points of view. If selected for construction, its impacts on the neighborhood will require mitigation. Several properties will require relocation.

Widening of Zoo Blvd., while not as good as 13th Street for congestion relief, would be an alternate choice with an acceptable level of service. Its impact on the neighborhood is minimal, however at a much lower benefit-cost ratio.

A 25th Street bridge across the floodway may be necessary at a later date depending upon future growth in the northwest area.

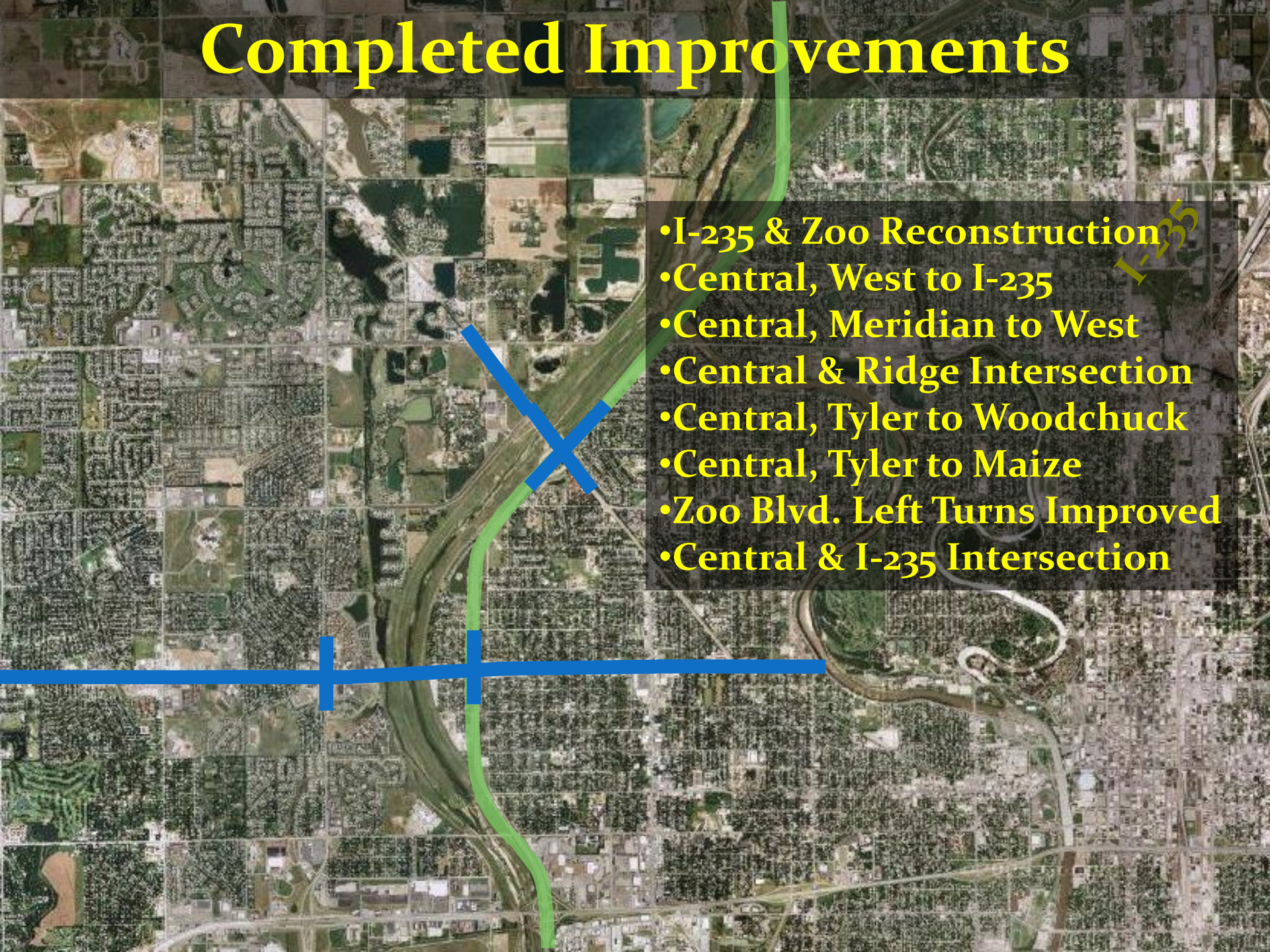
The impact of the alternatives may require evaluation in a final Environmental Assessment (EA) or Environmental Impact Statement (EIS) document during the design phase for the selected improvement.

# Common Improvements

- Widen Central to 6/7 lanes from I-235 to Tyler
- Widen Central to 5 lanes from I-235 to Meridian
- Widen 13<sup>th</sup> Street to 5 lanes from Windmill west to Maize Road
- Widen 13<sup>th</sup> Street to 5 lanes from West Street east to Woodlawn
- Improvement of existing interchange at I-235 & Central
- Kellogg as a six-lane freeway from Mid-Continent Interchange to Edgemoor.



# Completed Improvements

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- The background is an aerial photograph of a city. A green line highlights a route that starts from the top right, goes west, then turns south, following a major road. A blue 'X' is drawn over a specific intersection on this route. A blue line also runs horizontally across the lower part of the map, intersecting the green route.
- I-235 & Zoo Reconstruction
  - Central, West to I-235
  - Central, Meridian to West
  - Central & Ridge Intersection
  - Central, Tyler to Woodchuck
  - Central, Tyler to Maize
  - Zoo Blvd. Left Turns Improved
  - Central & I-235 Intersection

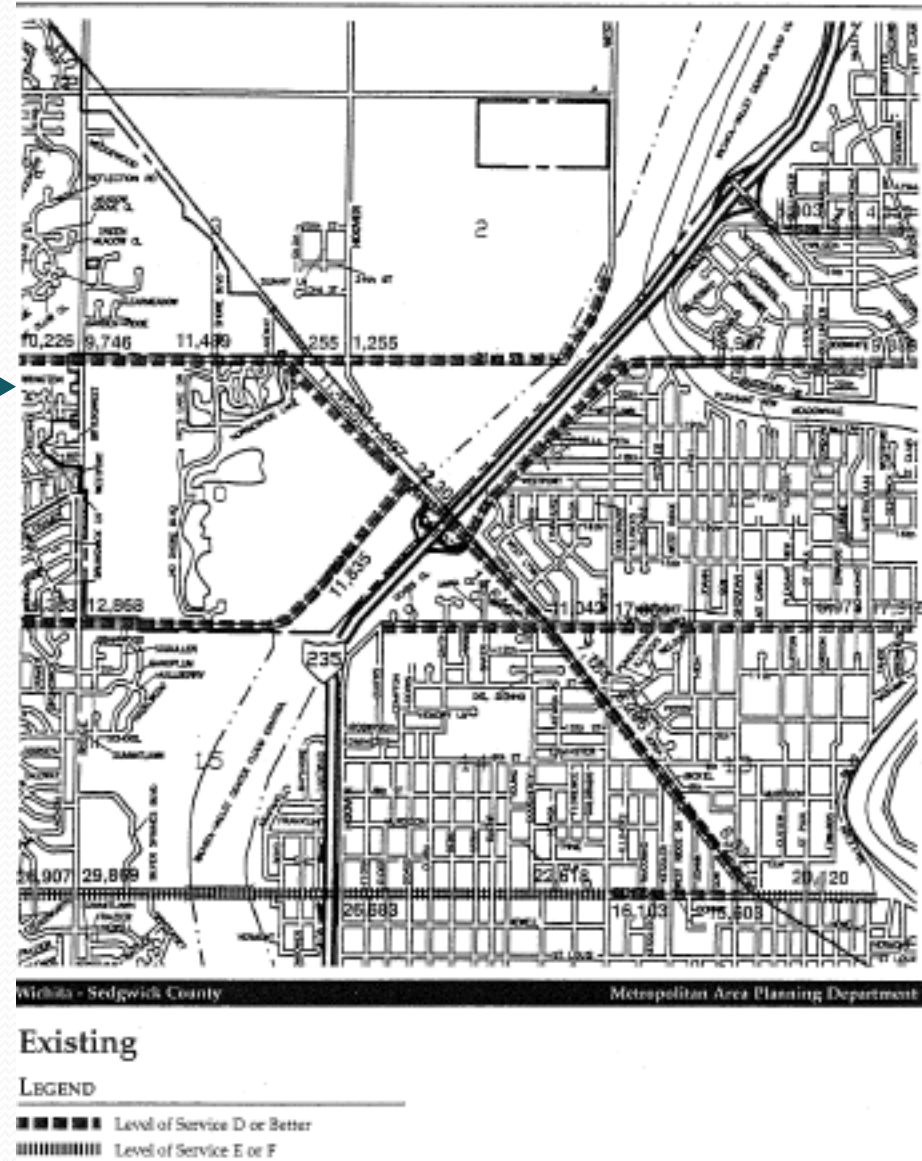


# 1995 Northwest Wichita Congestion Study

1994 Actual Traffic:  
9,746

2020 Projected Traffic:  
12,000 to 18,000

2007 Actual Traffic:  
28,965 Eastbound  
31,578 Westbound



The second study: August 1997

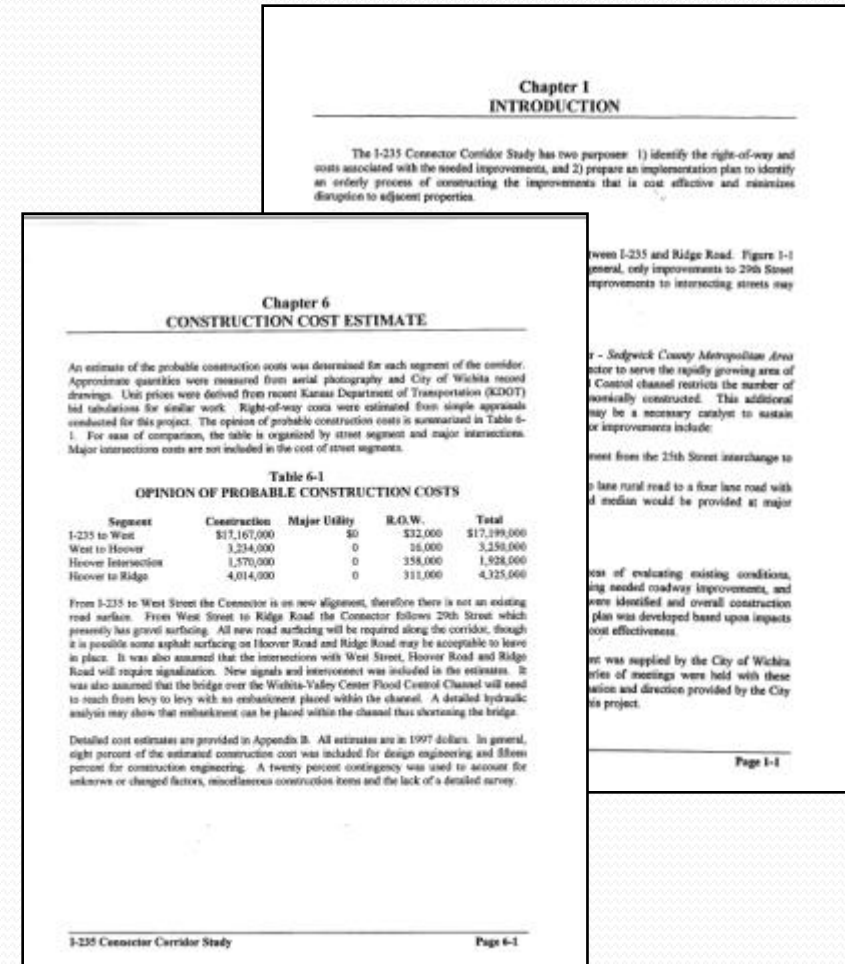
# I-235 Connector Corridor Study

*HWS Consulting Group Inc.*

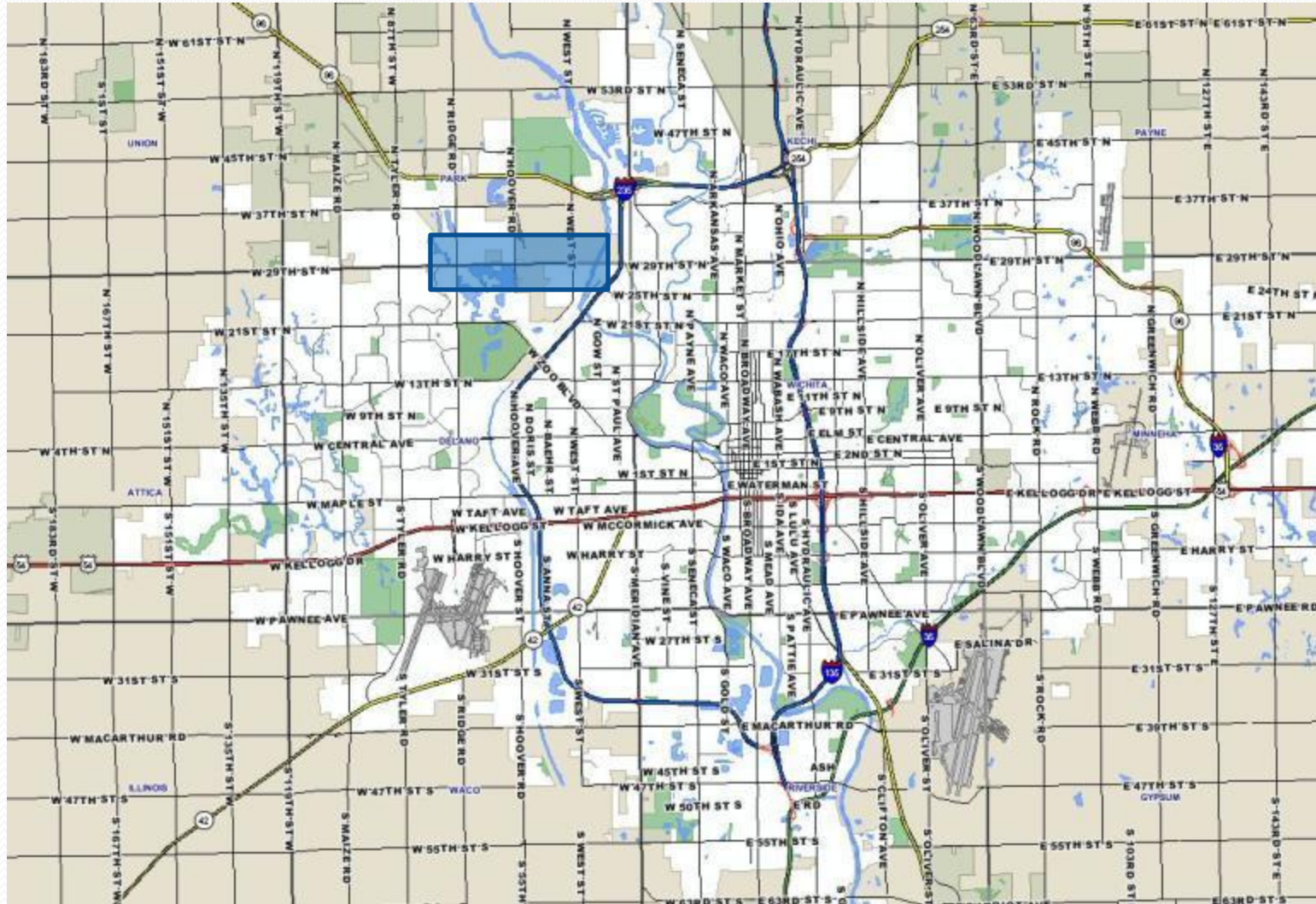


# I-235 Connector Corridor Study

- “The primary focus of this study is 29<sup>th</sup> Street between I-235 and Ridge Road.”
- Construction costs of over \$26 mil.



# Study Area



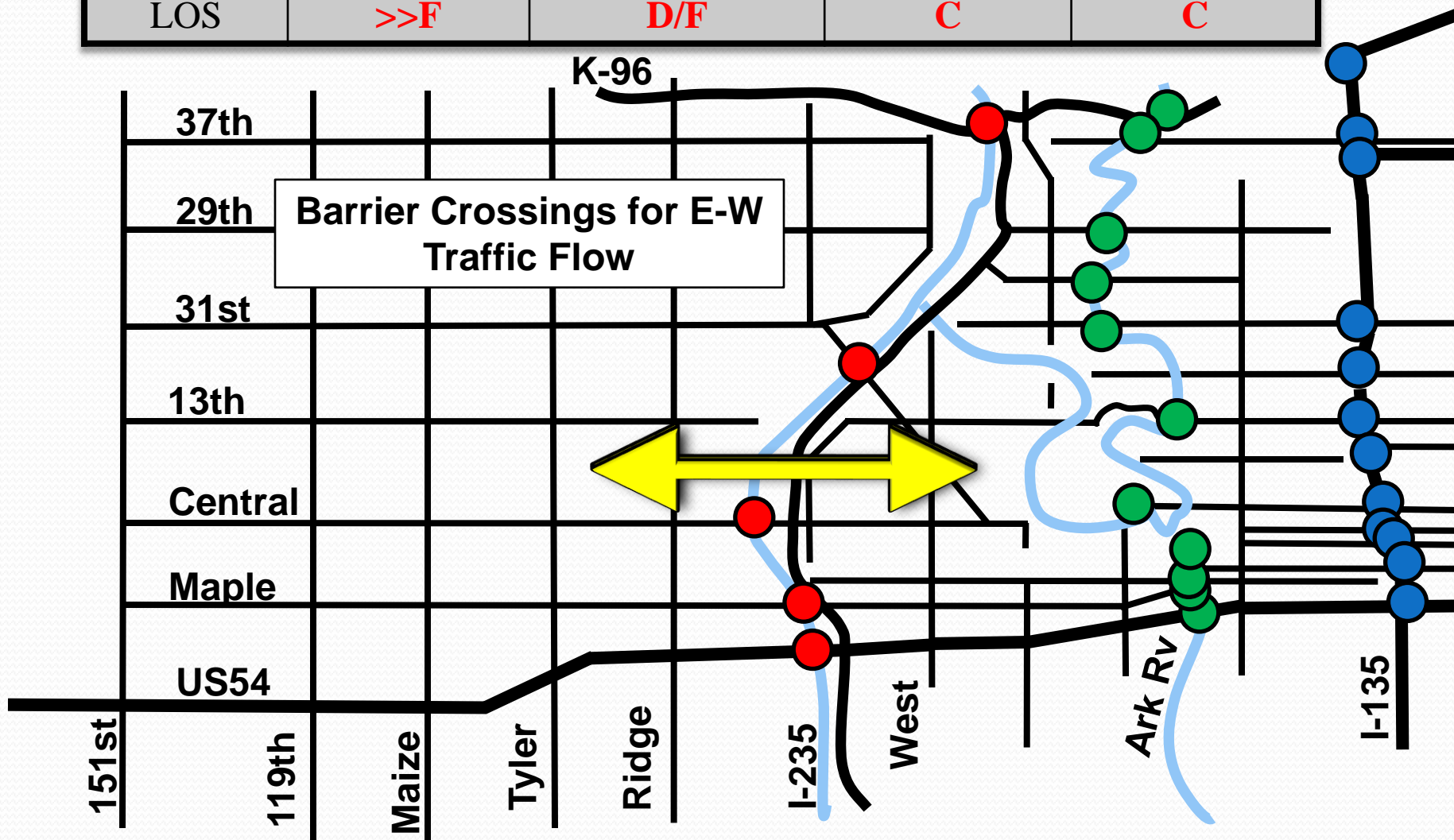
The third study: April 2001

# Northwest Wichita Traffic Congestion Relief Study

*Parsons, Brinckerhoff,  
Quade & Douglas Inc.*



	Floodway Year 2030	Year 2000		
		Floodway	Ark. River	I-135
ADT	279,000	175,000	239,000	231,000
Lanes	22 (5)	22 (5)	44 (11)	46 (12)
ADT/Lane	10,700	8,000	5,400	5,100
LOS	>>F	D/F	C	C



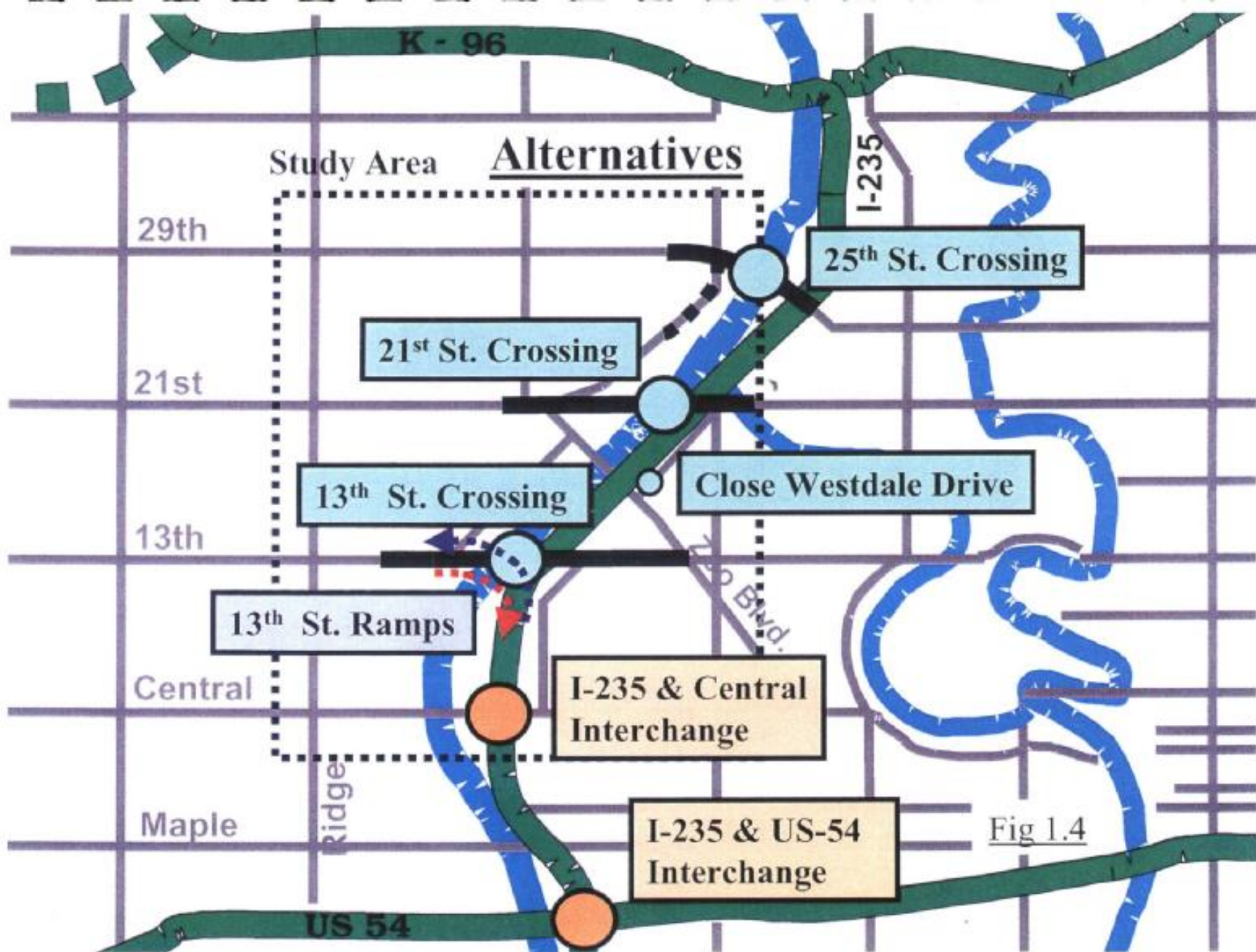


Fig 1.4

# 2001 Congestion Study

- The “13<sup>th</sup> Street Ramps @ I-235 were rejected early in the study process by KDOT and FHWA . . .”

Several new alternatives (highlighted in **bold**) including new combinations of 'single' alternatives were evaluated in this update as follows:

1. No Build ( No New Crossings)
2. **Improve Existing US-54 and Central Interchanges at I-235**
3. 25<sup>th</sup> Street Crossing
4. **25<sup>th</sup> Street Crossing with closure of Westdale Drive at Zoo Blvd.**
5. 21<sup>st</sup> Street Crossing
6. 13<sup>th</sup> Street Crossing
7. **13<sup>th</sup> Street Ramps at I-235**
8. 21<sup>st</sup> + 25<sup>th</sup> Street Crossings
9. 13<sup>th</sup> + 25<sup>th</sup> Street Crossings
10. 13<sup>th</sup> + 21<sup>st</sup> Street Crossings
11. 13<sup>th</sup> + 21<sup>st</sup> + 25<sup>th</sup> Street Crossings

Fig 1.4 shows graphical depiction of all BUILD alternatives. Fig 1.6 and Fig 1.7 show conceptual schematics of 21<sup>st</sup> and 13<sup>th</sup> street crossings.

## 1.6.1 Level-of-Service Analysis

Alternatives 1 through 6 do not achieve the desired level-of-service of 'C/D' in the study area.

**Alternative No. 7, 13<sup>th</sup> Street Ramps @ I-235, was rejected early in the study process by KDOT and FHWA due to:**

- (a) Partial interchange design
- (b) Adverse impacts to the interstate I-235
- (c) Proximity to Central & Zoo Blvd. interchanges and
- (d) Adverse impacts to east-west traffic flow circulation

Alternatives 8 through 10 bring the level-of-service into the "D" zone— low "D" for No. 8, mid "D" for No. 9 and high "D" for No. 10.

Alternative No. 11 achieves a low "C" level-of-service in the study area.

## 1.6.2 Alternative Evaluation

The increase in TOTAL traffic volume across the Floodway / I-235 barrier between US-54 and K-96 from Year 2000 to Year 2030 is 60 % without any additional floodway crossings. The corresponding increase with two additional crossings is 62 %, resulting in a NET 2% difference between "0" and "2" additional floodway crossings. Furthermore, the level-of-service on major streets east of I-235 is shown to be unchanged ("D") in Year 2030 with or without additional floodway crossings as a result of distribution of traffic on "under utilized" portions of Zoo Blvd. and Central Avenue, east of West Street.

Two types of impacts are evaluated in the update process; property relocations and quality of traffic flow east of I-235 with additional floodway crossings.

**21<sup>st</sup> Street crossing** is estimated to impact approximately 22 properties for relocation along 21<sup>st</sup> Street, West Street and Westdale Drive. Furthermore, due to geometric complexities







# Engineering Efforts

- Installed 39 traffic counters in December 2007
- Installed 40 traffic counters in May 2008
- In depth turn count analysis in May 2008
- Obtained detailed video in May 2008
- Seven technicians performing turning counts in May 2008



Am Peak

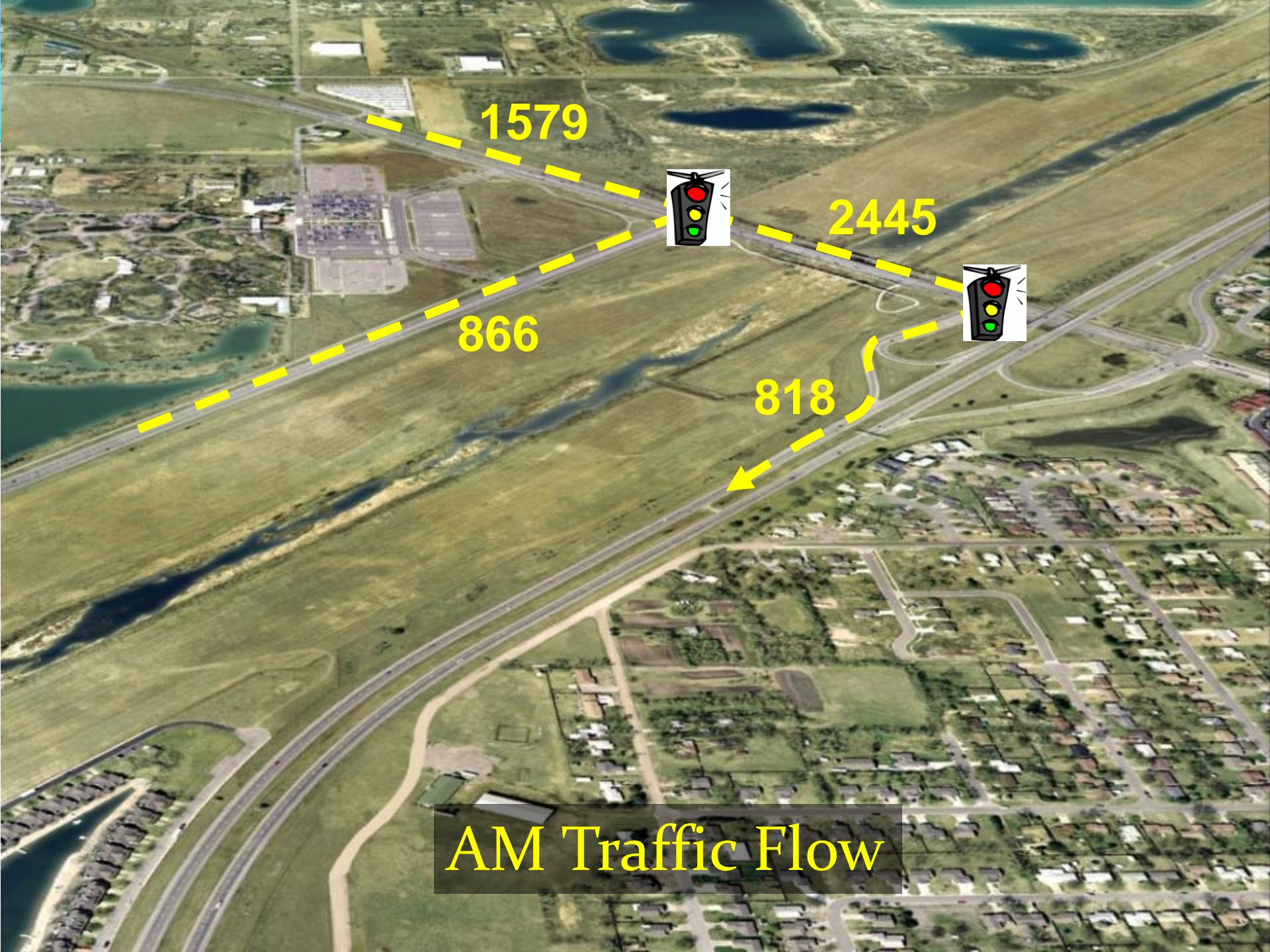




Pm Peak

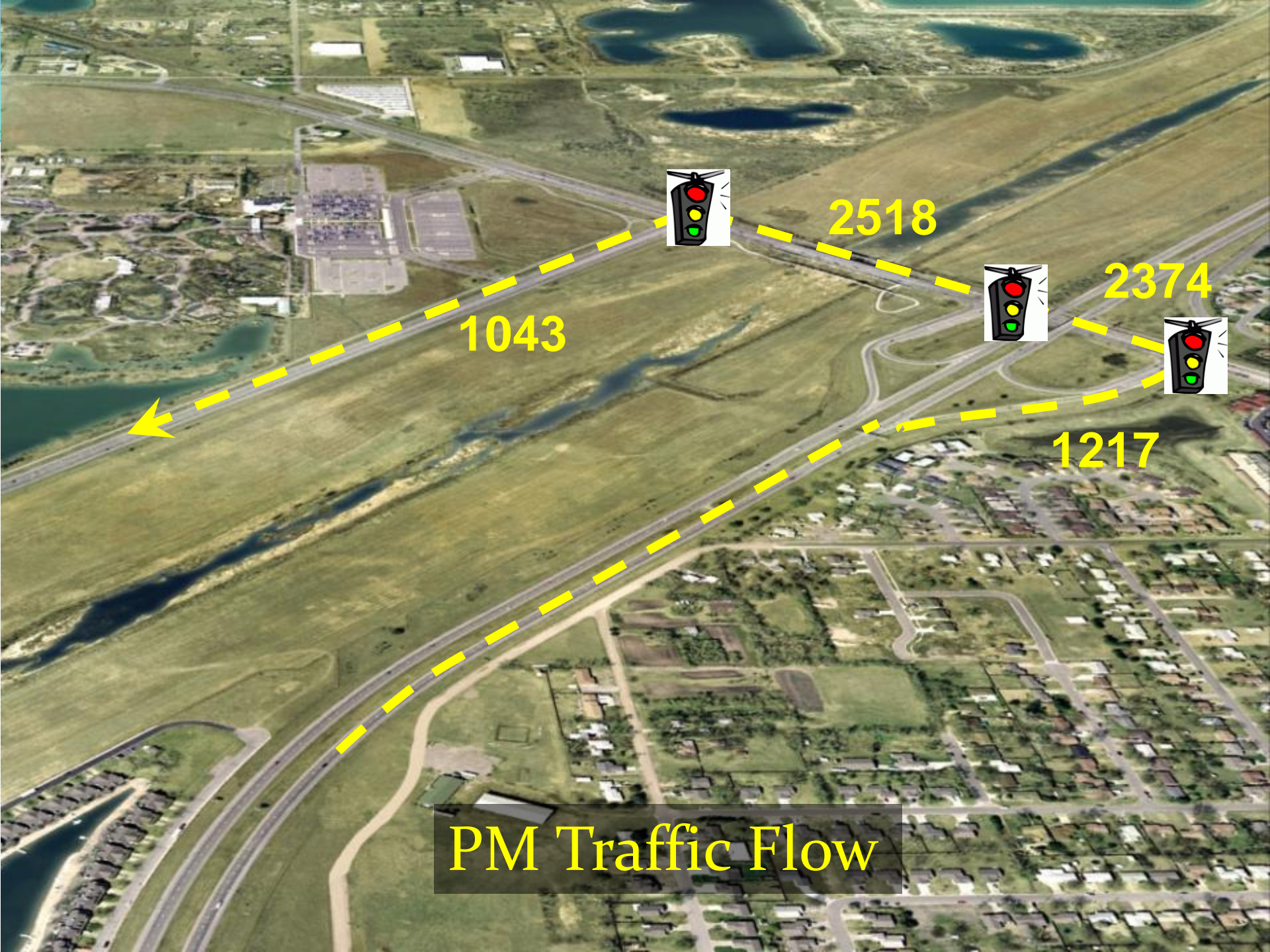






AM Traffic Flow





PM Traffic Flow



# The Floodway Bridge Bottleneck

An aerial photograph of a multi-lane highway interchange. A yellow arrow points from a text box in the lower right towards a bridge structure on the left side of the highway. The bridge appears to be a floodway bridge. The surrounding area includes green fields, a river or canal, and some residential development.

- 50% of traffic from I-235
- 33% from NB I-235
- 17% from SB I-235















The fourth look: 2008

A New Concept



